

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A resonator ~~piece~~piece, including:

a base portion in which a base portion electrode portion is formed;
resonating arm portions formed so as to project from the base portion;
groove portions including groove electrode portions formed in front surfaces
and/or back surfaces of the resonating arm portions;

side surface electrode portions formed in side surfaces of the resonating arm
portions in which the groove portions of the resonating arm portions are not formed;
groove electrode-use connection electrode portions that connect the base
portion electrode portion with the groove electrode portions; and

side surface electrode-use connection electrode portions that connect the base
portion electrode portion with the side surface electrode portions, ~~wherein~~
~~the-a~~ width of the base portion side of openings of the groove portions ~~is-being~~
formed narrower than ~~the-a~~ width of other portions, with connection electrode disposition
portions for disposing the groove electrode-use connection electrode portions or the side
surface electrode-use connection electrode portions being formed ~~near-adjacent to~~ the
narrowly formed openings of the groove portions, and

~~the~~ shapes of the openings of the groove portions ~~are-being~~ formed so as to be
substantially symmetrical with respect to hypothetical lines disposed along ~~the-a~~ longitudinal
direction at width-direction centers of the groove portions.

2. (Currently Amended) The resonator piece of claim 1, ~~wherein~~ the resonating
arm portions ~~are-being~~ plurally formed, and the shapes of the openings of the groove portions
formed in the plurality of resonating arm portions ~~are-being~~ substantially the same.

3. (Currently Amended) The resonator piece of claim 1-~~or 2~~, ~~wherein~~ the width of the narrowly formed openings of the groove portions ~~is~~ being formed narrower than the ~~a~~ width of the openings of the groove portions of other portions by about 0.02 mm.

4. (Currently Amended) The resonator piece of ~~any of claims 1 to 3~~ claim 1, ~~wherein~~ the groove portions ~~are~~ being formed in the front surfaces and the back surfaces of the resonating arm portions, and in a case where cross sections of the each resonating arm portions are formed in a depth direction of the groove portions, the cross sections ~~are~~ being formed in substantial "H" shapes.

5. (Currently Amended) The resonator piece of ~~any of claims 1 to 4~~, ~~wherein~~ claim 1, the resonator piece ~~is~~ being formed by a crystal tuning fork resonator piece.

6. (Currently Amended) The resonator piece of claim 5, ~~wherein~~ ~~the~~ a resonance frequency of the crystal tuning fork resonator piece is substantially 32 kHz.

7. (Currently Amended) A resonator in which a resonator piece is accommodated inside a package, the resonator piece including:

 a base portion in which a base portion electrode portion is formed;
 resonating arm portions formed so as to project from the base portion;
 groove portions including groove electrode portions formed in front surfaces and/or back surfaces of the resonating arm portions;
 side surface electrode portions formed in side surfaces of the resonating arm portions in which the groove portions of the resonating arm portions are not formed;
 groove electrode-use connection electrode portions that connect the base portion electrode portion with the groove electrode portions; and
 side surface electrode-use connection electrode portions that connect the base portion electrode portion with the side surface electrode portions, ~~wherein~~

~~the a~~ width of the base portion side of openings of the groove portions of the resonator piece ~~is being~~ formed narrower than ~~the a~~ width of other portions, with connection electrode disposition portions for disposing the groove electrode-use connection electrode portions or the side surface electrode-use connection electrode portions being formed ~~near~~ adjacent to the narrowly formed openings of the groove portions, and

~~the~~ shapes of the openings of the groove portions ~~are being~~ formed so as to be substantially symmetrical with respect to hypothetical lines disposed along the longitudinal direction at width-direction centers of the groove portions.

8. (Currently Amended) The resonator of claim 7, ~~wherein~~ the resonating arm portions of the resonator piece ~~are being~~ plurally formed, and the shapes of the openings of the groove portions formed in the plurality of resonating arm portions are substantially the same.

9. (Currently Amended) The resonator of claim 7-~~or~~ 8, ~~wherein the~~ ~~a~~ width of the narrowly formed openings of the groove portions of the resonator piece ~~is being~~ formed narrower than ~~the a~~ width of the openings of the groove portions of other portions by about 0.02 mm.

10. (Currently Amended) The resonator of ~~any of claims 7 to 9~~ claim 7, ~~wherein~~ the groove portions of the resonator piece ~~are being~~ formed in the front surfaces and the back surfaces of the resonating arm portions, and in a case where cross sections of the each resonating arm portion are formed in a depth direction of the groove portions, the cross sections ~~are being~~ formed in substantial "H" shapes.

11. (Currently Amended) The resonator of ~~any of claims 7 to 10~~ claim 7, ~~wherein~~ the resonator piece ~~is being~~ formed by a crystal tuning fork resonator piece.

12. (Currently Amended) The resonator of claim 11, ~~wherein~~ the resonance frequency of the crystal tuning fork resonator piece ~~is being~~ substantially 32 kHz.

13. (Currently Amended) The resonator of ~~any of claims 7 to 12~~claim 7, ~~wherein~~ the package is being formed in a box shape.

14. (Currently Amended) The resonator of ~~any of claims 8 to 14~~claim 8, ~~wherein~~ the package is being formed in a ~~so-called cylinder type~~generally cylindrical shape.

15. (Currently Amended) An oscillator in which a resonator piece and an integrated circuit are accommodated inside a package, the resonator piece including:

a base portion in which a base portion electrode portion is formed;

resonating arm portions formed so as to project from the base portion;

groove portions including groove electrode portions formed in front surfaces and/or back surfaces of the resonating arm portions;

side surface electrode portions formed in side surfaces of the resonating arm portions in which the groove portions of the resonating arm portions are not formed;

groove electrode-use connection electrode portions that connect the base portion electrode portion with the groove electrode portions; and

side surface electrode-use connection electrode portions that connect the base portion electrode portion with the side surface electrode portions, ~~wherein~~

~~the~~a width of the base portion side of openings of the groove portions of the resonator piece is being formed narrower than ~~the~~ width of other portions, with connection electrode disposition portions for disposing the groove electrode-use connection electrode portions or the side surface electrode-use connection electrode portions being formed ~~near~~ adjacent to the narrowly formed openings of the groove portions, and

~~the~~ shapes of the openings of the groove portions are being formed so as to be substantially symmetrical with respect to hypothetical lines disposed along the longitudinal direction at width-direction centers of the groove portions.

16. (Currently Amended) An electronic device used to connect a resonator, in which a resonator piece is accommodated inside a package, to a control unit, with the resonator piece including:

 a base portion in which a base portion electrode portion is formed;

 resonating arm portions formed so as to project from the base portion;

 groove portions including groove electrode portions formed in front surfaces and/or back surfaces of the resonating arm portions;

 side surface electrode portions formed in side surfaces of the resonating arm portions in which the groove portions of the resonating arm portions are not formed;

 groove electrode-use connection electrode portions that connect the base portion electrode portion with the groove electrode portions; and

 side surface electrode-use connection electrode portions that connect the base portion electrode portion with the side surface electrode portions, ~~wherein~~

the-a width of the base portion side of openings of the groove portions of the resonator piece is formed narrower than the-a width of other portions, with connection electrode disposition portions for disposing the groove electrode-use connection electrode portions or the side surface electrode-use connection electrode portions being formed ~~near~~ adjacent to the narrowly formed openings of the groove portions, and

the-shapes of the openings of the groove portions ~~are~~being formed so as to be substantially symmetrical with respect to hypothetical lines disposed along the-a longitudinal direction at width-direction centers of the groove portions.